

Final Salton Sea Air Quality Work Outline

Workshop Objective

The objective of the October 7, 2004 workshop was to integrate the various air quality work activities by various agencies and their contractors, in concert with regulatory agencies and stakeholders, into a comprehensive air quality work plan. A draft work plan was offered as a “strawman” to facilitate discussion among workshop participants.

Introduction

The Department of Water Resources (DWR) is tasked with conducting a restoration study of the Salton Sea and developing a programmatic environmental report (PEIR) by December 2006 on behalf of the Resources Agency Secretary.

The following outline identifies work activities to address Salton Sea air quality issues as they pertain to the restoration study and the development of a PEIR. Air quality is a broad and complex topic and is an integral component of any restoration alternatives considered in the PEIR.

The immediate future air quality work activities will build on past activities and integrate them into a PEIR. Past work activities have entailed air quality workshops, sediment studies, correlation of meteorological conditions with PM10 levels, and studies related to the prior development of closely related environmental documents.

Resources to Conduct Work Activities

DWR has contracted with the consulting firm of CH2M Hill to conduct the restoration study. The firm has retained Air Sciences, Inc., as a subcontractor, to provide expertise and assist in air quality work activities.

DWR is in the final stages of completing a contract with the Desert Research Institute (DRI), an affiliate of the University of Nevada, to do peer review and carry out various air quality work activities.

United States Bureau of Reclamation (USBR) has entered into a work agreement with the USGS in Flagstaff, AZ to carry out a number of air quality work activities at the Salton Sea; and with Quester Tangent Corporation (QTC) to conduct acoustic surveys of Sea deposits.

Work Plan Steps

Building on prior air quality studies, the following steps are proposed:

- Step 1. Coordination with Air Quality Agencies and Other Stakeholders
- Step 2. Establish Air Quality Baseline
- Step 3. Analyze Impacts of Meteorological Conditions and Other Variables on Air Quality

- Step 4. Determine Data Gaps
- Step 5. Identify Potential Air Quality Sources under Representative Alternatives
- Step 6. Identify Applicable Air Quality Significance Criteria
- Step 7. Develop/Identify Emissions Estimation Tools
- Step 8. Develop AQ-Related Screening Criteria for Analysis of Alternatives
- Step 9. Develop Impact Analysis Methodology
- Step 10. Develop/Identify Potential Approaches to Best Meet Air Quality Goals
- Step 11. Estimate/Evaluate Impacts of Screened Alternatives
- Step 12. Develop Mitigation for Significant Impacts and Quantify Benefits

Steps 1 through 7 can be completed without reference to detailed information regarding restoration alternatives. Steps 8 through 12 are directly related to formulating and analyzing alternatives, and will be scheduled in concert with the development of the draft PEIR.

The following outline is a sequence of steps and associated work activity, identifying each agency's potential role.

Step 1. Coordination with Air Quality Agencies and Other Stakeholders

DWR¹ will need the active participation and support from the regulatory bodies in all aspects of the air quality (AQ) work, namely: the California Air Resources Board (CARB), the Imperial County Air Pollution Control District (ICAPCD), the South Coast Air Quality Management District (SCAQMD), San Diego County APCD, Mojave Desert AQMD, and the US EPA – Region 9. In addition, DWR is requesting the involvement of comparable air quality regulatory agencies on Tribal Lands and in Mexico.

Work Activity

DWR will contact the air quality agencies for solicitation of members and/or their representatives to participate in air quality workshops. The agencies' role is foreseen as one of input, advisory support, and review of work products. The agencies are to be consulted for planning, coordination, information gathering, and review of work performed, including this work plan.

¹ Throughout the remainder of the document, DWR should be understood to include its consultant team, led by CH2M HILL, including subconsultants such as Air Sciences and SAIC.

Step 2. Establish Air Quality Baseline

DWR has prepared a draft air quality baseline assessment in the document titled *Salton Sea Ecosystem Management Plan, Initial Draft Report for Existing Baseline Conditions*, August 27, 2004.

One of the data gaps identified in this draft report was that all air quality monitoring and meteorological stations and California Irrigation Management Information System meteorological stations (CIMIS stations) in the Coachella and Imperial Valleys and surrounding area need to be identified. These will be shown on a regional map, accompanied with a table indicating the type of instrumentation, data collected, data format, frequency of collection, data ownership. The data will be summarized and a location referenced so that the monitoring and meteorological data for each station can be accessed.

Other data gaps identified in the initial draft report will be assessed and addressed in Step 4 and subsequent steps.

Work Activity

The air quality baseline assessment will be refined and supplemented as the steps in this work plan proceed, with the best available information to be included in the Existing Setting section of the draft PEIR.

Step 3. Analyze Impacts of Meteorological Conditions and Other Variables on Air Quality

The impact of meteorological conditions on air quality will be researched by the USGS in ongoing work, to the extent that existing data will allow. Meteorological variables that may affect windblown fugitive dust and air quality impacts include, but are not limited to, wind speed, frequency, direction, and duration; temperature; and humidity. Gust wind speed and wind direction may also prove important. Other variables that may affect air quality, and tools for measuring or monitoring these variables and ambient concentrations of pollutants of concern (POC), will be evaluated.

Work Activity

USBR through the USGS Flagstaff Office is to expand their analyses of the Palm Springs and Indio stations. It is anticipated that the Niland and Westmorland stations will be similarly analyzed. As the screening criteria for alternatives and alternatives are developed, an assessment should be made to determine if this type of analysis may be warranted for other area stations, or if other stations are needed. Additionally, satellite imagery should be utilized if these images can be temporally matched with high wind events and/or dust storms.

USBR/Salton Sea Science Office (SSSO)/USGS to begin visual documentation by photograph, GPS, satellite imagery, written logs, and video of fugitive dust events in the study area. This is a first step in understanding and documenting where the problem areas currently are, and may later be. This may later include

future training of local APCD or other Federal employees to become 'plume chasers'.

Step 4. Determine Data Gaps

Data gaps exist in each of the subject areas identified in Steps 5 through 10. More information is needed on potential air emission sources, applicable air quality significance criteria, emissions estimation tools, impact analysis methods, and mitigation approaches. This task will develop more detailed lists of data gaps to be investigated and filled in the following steps, and will provide recommendations for collection of needed information.

DWR is to undertake the determination of data gaps. The information from Steps 2 and 3 and the data gap findings will then be presented in subsequent workshops for input and concurrence. The findings should clearly describe:

- the data that are needed and the reason why they are needed
- The data that are available
- The data that are missing
- The time period over which the data are needed

Data gaps may fall into two types:

- 1) data gaps specific to development of alternatives, criteria for screening of alternatives, and/or impact analysis
- 2) data gaps related to adaptive management planning and/or indications that changes in proposed or implemented approaches may need to be evaluated

This task will then involve development and if schedule allows, initial implementation of a data collection plan. The discussions provided in Steps 5 through 10 provide the recommended overall approach to address these areas of data gaps.

One area of data gaps of particular interest involves the adequacy of existing air monitoring data, in particular, PM10 and PM2.5 monitoring data, in the study area. DWR will review the existing data and determine what additional data are needed to estimate particulate emission rates or particulate emissions potential for the potentially exposed shoreline area, as well for the surrounding desert and agricultural regions.

Specific to air monitoring data gaps, it is anticipated DWR and USBR will coordinate and collaborate on the funding of capital costs of any additional monitoring and/or meteorological stations. The planning of data collection must directly link activities to the purpose and need of this project, and recognize that monitoring may need to be continued indefinitely.

In addition, the group will identify the type(s) and model(s) of instruments and other tools that will be used to collect the data. Careful consideration should be

given to the manner of collection because it is anticipated that data quality must meet rigorous standards in order to withstand legal challenges.

Desert Research Institute, under contract with DWR, will provide an independent review of the findings, and will provide input and assistance as needed.

Work Activity

DWR to draft a list of data gaps and a recommended data collection plan. This will include incorporating input from the agencies and from the peer review.

DWR to work collaboratively with the agencies to develop and implement the data collection plan.

Step 5. Identify Potential Air Quality Sources under Representative Alternatives

This task involves identification of potential air quality emissions sources that may be associated with alternatives analyzed in the Ecosystem Management Plan environmental documents. Potential emissions sources and impacts include, but may not be limited to: fugitive dust from exposed seabed, construction, and land fallowing; exhaust emissions from construction equipment and employee commute vehicles, volatilization from evaporating or relocated Sea water, and emissions from recreation-related vehicular traffic and boating. This task will include evaluation of potential sources of both criteria pollutants (NO_x, ROG, PM, CO, and SO_x) and toxic or hazardous air pollutants (HAPs). This task will expand information provided in the draft report on existing baseline conditions.

Work Activity

DWR to develop and/or identify an overview of potential air quality sources and impacts under representative alternatives.

Step 6. Identify Applicable Air Quality Significance Criteria

This task will identify and work to gain consensus on applicable air quality significance criteria for the CEQA analyses of significant impacts. In addition, consensus will be sought on how the significance criteria will be applied and how significance of alternatives will be determined.

Work Activity

DWR to develop and/or identify a list of applicable significance criteria, and provide a plan for application of significance criteria in the determination of significant impacts.

Step 7. Identify Emissions Estimation Tools

The goal is to identify and implement emissions factors, dispersion models, or other tools that can reasonably predict potential future emissions rates and

potential impacts on air quality associated with meteorological events, program alternatives, or other variables. The recommendations will focus on tools appropriate for conditions in the areas surrounding the Sea and the Coachella and Imperial Valleys, and tools that are appropriate given the data available in the timeframe of the Programmatic EIR.

Work Activity

DWR to identify existing models and/or analytical tools.

Desert Research Institute, under contract with DWR, will peer review and provide input and assistance as needed.

Step 8. Develop AQ-Related Screening Criteria for Analysis of Alternatives

Based on the relative impacts and potential for effective mitigation of possible air emission sources, a screening or "ranking" of different types of sources will be made. Potential sources will be ranked relatively and qualitatively to aid in the screening of project alternatives to be evaluated in PEIR. For example, potential emissions from construction equipment may be ranked high relative to other emissions sources for a given alternative, while emissions from water volatilization may be ranked low.

Work Activity

DWR to develop and/or identify selection criteria for analysis of alternatives, based on information developed in other steps.

Desert Research Institute, under contract with DWR, will peer review and provide input and assistance as needed.

Step 9. Develop Impact Analysis Methodology

Based on the information developed in prior steps regarding data gaps, emission sources, and emissions estimation tools, a methodology for impact analysis will be developed. It is anticipated that this methodology will be uniformly used in future steps to evaluate the screened alternatives, and also will be used to evaluate the benefits of mitigation alternatives.

For example, a method for assessment of the particulate emission potential (PEP) of current or future exposed soils and sediments may be developed by combining the results of the following work activities.

- USBR/QTC will characterize the sediments underlying the Sea to a depth of 25 feet by collecting and analyzing samples and dual frequency acoustic data.
- USBR/USGS to undertake a study using Landsat TM images to predict the vulnerability of currently exposed sediments to wind erosion using the algorithms developed for the Mojave Desert.

- DWR/DRI to conduct wind tunnel tests subsequent a determination of suitable locations
- DWR/CH2M HILL to make a comparison of the PEP of sediments at Owens Lake with those at the Sea, considering parameters such as; exposed sediment type salt types, meteorological conditions, capillary zone, etc.
- DWR/DRI to perform a comparative analysis of other playas
- DWR to draft an approach to assess the PEP of potentially exposed soils and sediments, incorporating the results of the foregoing work activities. For example, meteorological variables that may affect emission rates, and therefore air quality impacts, include wind speed, gust wind speed, wind direction, frequency, and duration; temperature; and humidity. Other variables include soil/sediment types, soil/sediment chemistry, extent of exposed areas, stability of exposed playa, surface crust formation, fetch, land use and land management, and control of public access.

Work Activity

DWR to develop and/or identify impact analysis methodologies.

Desert Research Institute, under contract with DWR, will peer review and provide input and assistance as needed.

Step 10. Develop/Identify Potential Approaches to Best Meet Air Quality Goals

Based on the potential emissions sources and impacts identified in Step 5, potential approaches for mitigation and meeting air quality-related goals will be investigated.

For example, for potential fugitive dust from exposed seabed, construction, and land fallowing, DWR may perform an analysis of the risk of emissivity (or particulate emissions potential) versus mitigation or emission reduction options. Based on the results of this analysis, one or more mitigation or emission reduction approaches may be developed in greater detail, including a description of implementation, time frame, rough-order-of-magnitude costs, long-term performance, maintenance, and applicable locations. The information should be in a form so that the results can be readily used in analyses of alternatives.

DWR/DRI to perform a peer review of the results and their subsequent use in the alternative analyses.

Work Activity

DWR to develop and/or identify potential mitigation approaches, based on emission sources and potential impacts.

Desert Research Institute, under contract with DWR, will peer review and provide input and assistance as needed.

Step 11. Estimate/Evaluate Impacts of Screened Alternatives

DWR will complete the estimation of emissions and potential impacts for each of the screened project alternatives. The evaluation will follow CEQA guidelines and a determination of significance for each impact will be made.

Work Activity

DWR to estimate and evaluate the impacts and potential impacts of the selected alternatives, to support development of the CEQA documentation.

Desert Research Institute, under contract with DWR, will peer review and provide input and assistance as needed.

Step 12. Develop Mitigation for Significant Impacts and Quantify Benefits

After identification of significant impacts, mitigation measures will be identified to reduce impacts. Impact reduction will be identified and benefits will be quantified. Proposed mitigation measures will be reviewed by the agencies and then incorporated into the draft PEIR.

Work Activity

DWR to develop and/or identify mitigation measures for impacts of alternatives deemed to be significant. In addition, DWR will evaluate benefits of the proposed mitigation measures, and quantify these benefits to the extent feasible. Impacts deemed to remain significant or potentially significant after mitigation will be identified.

Desert Research Institute, under contract with DWR, will peer review and provide input and assistance as needed.